<u>WHAT IS CLAIMED IS:</u>

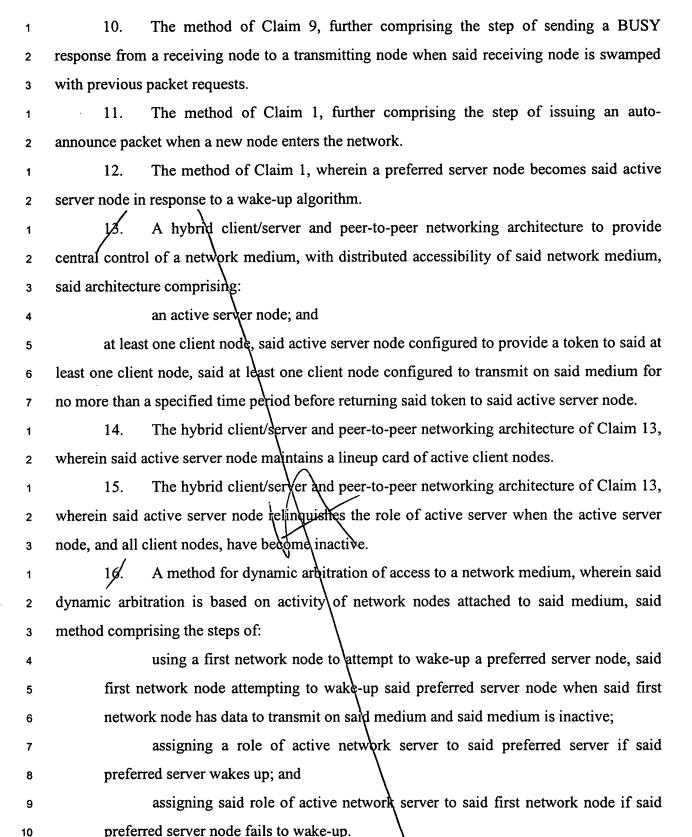1.   A method for arbitrating use of a network medium to avoid collisions caused by multiple nodes attempting to transmit data on the network medium at the same time, said method comprising the steps of:

listening to a network medium to determine if said medium is active or inactive;

establishing an active network server if said medium is inactive; and

using centralized token passing for access to a said medium when said medium is active, said centralized token passing controlled by said active network server.

2.   The method of Claim 1, wherein said active network server maintains a lineup card that lists one or more active client nodes.

3.   The method of Claim 1, wherein said active network server passes a token to a selected client node, said selected client node being one of said one or more active client nodes listed on said lineup card.

4.   The method of Claim 3, wherein said selected node is allowed to transmit data on said network medium only when said selected node has said token.

5.   The method of Claim 3, wherein said selected node is removed from said lineup card when said node has been inactive for a period of time.

6.   The method of Claim 3, wherein a new client node requests insertion on said lineup card by using spitting on the bus algorithm.

7.   The method of Claim 1, wherein a presence of said datagram is detected by matching a specified preamble and length sequence.

8.   The method of Claim 1, wherein access to said medium is provided by a media access control layer.

9.   The method of Claim 8, wherein said media access control layer provides control structures to implement a spare receive buffer large enough to hold a Media Access Control Header.

1   10.   The method of Claim 9, further comprising the step of sending a BUSY
2   response from a receiving node to a transmitting node when said receiving node is swamped
3   with previous packet requests.

1   11.   The method of Claim 1, further comprising the step of issuing an auto-
2   announce packet when a new node enters the network.

1   12.   The method of Claim 1, wherein a preferred server node becomes said active
2   server node in response to a wake-up algorithm.

1   13.   A hybrid client/server and peer-to-peer networking architecture to provide
2   central control of a network medium, with distributed accessibility of said network medium,
3   said architecture comprising:

4   an active server node; and

5   at least one client node, said active server node configured to provide a token to said at
6   least one client node, said at least one client node configured to transmit on said medium for
7   no more than a specified time period before returning said token to said active server node.

1   14.   The hybrid client/server and peer-to-peer networking architecture of Claim 13,
2   wherein said active server node maintains a lineup card of active client nodes.

1   15.   The hybrid client/server and peer-to-peer networking architecture of Claim 13,
2   wherein said active server node relinquishes the role of active server when the active server
3   node, and all client nodes, have become inactive.

1   16.   A method for dynamic arbitration of access to a network medium, wherein said
2   dynamic arbitration is based on activity of network nodes attached to said medium, said
3   method comprising the steps of:

4   using a first network node to attempt to wake-up a preferred server node, said
5   first network node attempting to wake-up said preferred server node when said first
6   network node has data to transmit on said medium and said medium is inactive;

7   assigning a role of active network server to said preferred server if said
8   preferred server wakes up; and

9   assigning said role of active network server to said first network node if said
10   preferred server node fails to wake-up.

1   17.   A data network comprising:

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2   a network medium;

3   active server means for maintaining a list of active client nodes and arbitrating

4   access to said medium, said active server means providing a token;

5   client node means for receiving said token from said active server means.

1   18.   The data network of Claim 17, wherein said client node means comprises a

2 smart node.

1   19.   The data network of Claim 17, wherein said client node means comprises a

2 dumb node.

1   20.   The data network of Claim 17, wherein said client node means becomes an

2 active client node by spitting on the bus.

1   21.   The data network of Claim 17, wherein said network medium is a power line.

1   22.   The data network of Claim 17, wherein said list of active client nodes

2 comprises a lineup card.

1   23.   The data network of Claim 17, wherein each of said active nodes in said list of

2 active nodes are prioritized based on a type of data carried by each node.

1   24.   The data network of Claim 23, wherein said list of nodes allows for a

2 maximum number of nodes to be listed, said list configured to remove a first node that

3 communicates data having a relatively lower priority in order to make room for a second node

4 that carries data having a relatively higher priority.

1   25.   A network node coupled to a network, said node comprising:

2   a processor;

3   a memory operatively coupled to said processor; and

4   a protocol program loaded in said memory, said program configured to:

5   announce a presence of said node on said network;

6   request access to a network medium;

7   receive a token from a server node;

8   hold said token;

9   transmit data on said network while holding said token; and

10   return said token to said server node within a specified period of time.

1   26.   The network node of Claim 25, wherein said network medium is a power line

2   medium and said network node provides streaming data across said power line medium.

1   27.   The network node of Claim 26, wherein said multimedia data comprises voice

2   data.